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Page 5SS-8 MISSILE (SASIN)

USSR

1. WEAPON SYSTEM: INTERCONTINENTAL BALLISTIC MISSILE. U.S. DESIGNATION -- SS-8 (SASIN); SOVIET DESIGNATION UNKNOWN. (PHOTOGRAPH TAKEN 9 MAY 1965, MOSCOW VE DAY PARADE; MISSILE WAS FIRST SEEN AND PHOTOGRAPHED DURING 7 NOVEMBER 1964 MOSCOW PARADE).
2. PRODUCTION: THE INSTALLATION SHOWN ON THE GRAPHIC IS THE DNEPROPETROVSK MISSILE DEVELOPMENT AND PRODUCTION CENTER (DMDPC) WHICH, ALTHOUGH IT IS NOT BELIEVED TO BE ASSOCIATED WITH THE PRODUCTION OF THE SS-8, IS TYPICAL OF A SOVIET MISSILE PRODUCTION AND STATIC TEST FACILITY. (KH-7 PHOTOGRAPHY).
3. RESEARCH & DEVELOPMENT: THE INITIAL SS-8 TEST FLIGHTS WERE FIRED FROM LAUNCH COMPLEX "A" (PAD A2) AT THE TYURATAM MISSILE TEST CENTER. THE FIRST TEST FLIGHT TOOK PLACE ON [REDACTED] AND ENDED IN FAILURE. (KH-7 PHOTOGRAPHY).
4. TROOP TRAINING & OPERATIONAL TESTING: THE FACILITY SHOWN ON THE GRAPHIC IS LAUNCH COMPLEX "F" AT THE TYURATAM MISSILE TEST

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CENTER. THIS HARDENED, THREE-SILO LAUNCH FACILITY IS THE PROTOTYPE FOR THE DEPLOYED SS-8 HARDENED LAUNCH SITES. (KH-7 PHOTOGRAPHY).

5. DEPLOYED SS-8 HARDENED SITE: LAUNCH AREA "A" AT THE OMSK ICBM COMPLEX IS ONE OF THREE HARDENED SS-8 LAUNCH FACILITIES KNOWN TO BE DEPLOYED IN THE USSR. (KH-7 PHOTOGRAPHY).

6. GENERAL: THE SS-8 (SASIN) IS A SECOND GENERATION INTER-CONTINENTAL BALLISTIC MISSILE. IT IS A PRODUCT OF THE GERMAN-ORIENTED DESIGN TEAM (KNOWN TO WESTERN INTELLIGENCE AS GROUP "A") WHICH HAS SPECIALIZED IN THE DESIGN OF MISSILES WHICH USE CRYOGENIC PROPELLANTS. THE SS-8 WAS FLIGHT TESTED ON THE TYURATAM MISSILE TEST RANGE AND, AFTER SOME DIFFICULTIES IN THE TEST PROGRAM, BECAME OPERATIONAL IN 1963.

CHARACTERISTICS: THE SS-8 IS A TANDEM, TWO-STAGE ICBM. ANALYSIS HAS PROVIDED THE FOLLOWING:

OVERALL LENGTH.....

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FIRST-STAGE DIAMETER..... 10 FT

SECOND-STAGE DIAMETER.....

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FIRST-STAGE WEIGHT (LIFT-OFF)..... 119,500 LBS  
SECOND-STAGE WEIGHT (LIFT-OFF)..... 38,350 LBS  
REENTRY VEHICLE WEIGHT..... 4,000 LBS  
TOTAL WEIGHT (APPROXIMATE)..... 162,000 LBS  
FIRST-STAGE THRUST (VACUUM)..... 328,000 LBS  
SECOND-STAGE THRUST (VACUUM)..... 68,000 LBS  
RANGE (MAXIMUM)..... 6,500 NM

AN SS-8 READY FOR FLIGHT MAY BE AS MUCH AS  
10 FT LONGER THAN THE PARADE MISSILES BECAUSE  
IT IS BELIEVED TO USE A SINGLE THRUST CHAMBER  
WHICH CANNOT BE CONTAINED WITHIN THE MISSILE  
BUT WOULD HAVE TO PROTRUDE FROM THE REAR.

(SS-8 TELEMETRY HAS NOT SHOWN MULTIPLE THRUST  
CHAMBERS.) IN ADDITION, THE NOSECONE SHOWN  
WAS PROBABLY SMALLER THAN THE ACTUAL REENTRY  
VEHICLE, AND WAS PROBABLY ONLY A DUMMY FOR  
PARADE PURPOSES.

- A. PROPULSION: THE PROPULSION SYSTEM FOR BOTH THE FIRST AND SECOND  
STAGE CONSISTS OF A LIQUID, BIPROPELLANT, TURBOPUMP-FED ROCKET ENGINE.  
HOWEVER, THE SAME ENGINE IS NOT USED IN BOTH STAGES; IN FACT, VERY  
LITTLE IS KNOWN ABOUT THE FIRST-STAGE PROPULSION SYSTEM. IN ADDITION,

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THERE ARE FOUR VERNIER/CONTROL CHAMBERS ON THE SECOND STAGE.

BOTH STAGES USE CRYOGENIC PROPELLANTS -- LIQUID OXYGEN (LOX)

BEING THE OXIDIZER AND AN AMINE IS USED FOR THE FUEL.

B. GUIDANCE: THE GUIDANCE IS BELIEVED TO BE RADIO-INERTIAL. THIS TYPE OF GUIDANCE MAKES THE SS-8 A HIGHLY ACCURATE WEAPON SYSTEM.

C. RANGE: THE MAXIMUM RANGE OF THE SS-8 IS BELIEVED TO BE APPROXIMATELY 6,500 NM. THE FACT THAT THE SYSTEM CAN BE FIRED TO THIS RANGE HAS BEEN DEMONSTRATED IN TEST FIRINGS.

7. RESEARCH AND DEVELOPMENT: THE FIRST FLIGHT TEST OF THE SS-8 WAS DETECTED ON [ ] THIS TEST, A FAILURE, FOLLOWED BY ABOUT TWO MONTHS THE INITIAL FLIGHT TEST OF THE SS-7 (FEB 61) WHICH HAS BECOME THE USSR'S MOST WIDELY DEPLOYED ICBM. INCLUDING THE INITIAL FLIGHT TEST, THE SS-8 HAS BEEN FIRED A TOTAL OF 57 TIMES TO DATE [ ] SEVENTEEN OF THESE FIRINGS RESULTED IN FAILURES, AND THE RESULT OF ONE (TO THE 3,400 NM RANGE) IS UNDETERMINED. OF THE TOTAL NUMBER OF FIRINGS, SIX HAVE BEEN TO EXTENDED RANGES AND TWO OF THESE HAVE BEEN FAILURES. EARLY SS-8 FIRINGS WERE MARKED BY A DEGREE OF UNRELIABILITY UNUSUAL FOR SOVIET ICBMS AND BY LONG PERIODS OF TIME BETWEEN LAUNCHES (E.G., 159 AND 196 DAYS). OPERATIONAL PROOF-TESTING OF THE SS-8

APPARENTLY ENDED WITH THE FIRING OF TWO SS-8S WITHIN 30 MINUTES ON [ ]

[ ] ONE TO THE 3,400 NM IMPACT AREA, AND ONE TO THE 6,500 NM IMPACT AREA.

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8. DEPLOYMENT: BESIDES BEING DEPLOYED AT THREE HARDENED LAUNCH FACILITIES, THE SS-8 IS ALSO DEPLOYED IN LIMITED NUMBERS AT "SOFT" LAUNCH SITES WHICH CONTAIN TWO FLAT CONCRETE LAUNCH PADS EACH. THERE ARE SEVEN SUCH SITES WHICH HAVE BEEN IDENTIFIED, AND TOGETHER WITH THE THREE KNOWN HARDENED (THREE-SILO) SS-8 LAUNCH FACILITIES, THERE IS A TOTAL OF 23 KNOWN SS-8 LAUNCHERS DEPLOYED IN THE USSR. THESE SITES ARE DEPLOYED AT THE KOZELSK, OMSK, PLESETSK, AND TYUMEN ICBM COMPLEXES. IN THE HARDENED MODE, IT IS BELIEVED THAT THE SS-8 IS FIRED FROM WITHIN THE SILO RATHER THAN FIRST BEING ELEVATED TO THE SURFACE.

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